

# **Internship Report**

## **on**

***“Challenges of Vehicle Tracking Business in Bangladesh”***

**(IN PARTIAL REQUIREMENT FOR THE DEGREE OF MBA)**

**SUBMITTED TO:**

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**MBA Program**

**BRAC Business School**

**16 January, 2016**

## LETTER OF TRANSMITTAL

16 January, 2016

Mr. SaifHossain  
Senior Lecturer  
BRAC Business School

**Subject: Submission of internship report on “Challenges of Vehicle Tracking Business in Bangladesh”.**

Dear Sir,

It is my great pleasure to submit the internship report on “**Challenges of Vehicle Tracking Business in Bangladesh**”. Which was assigned to me under your supervision to prepare as the partial requirement of my MBA program.

This paper is a study of Vehicle Tracking Management Business Bangladesh, including important factors of this service. I should thank you Sir, for your excellent and patient guidance towards the completion of this report. I greatly enjoyed preparing this report for you.

I hope and sincerely believe that this report will serve the purpose of my Internship Program.

Thank you again for your support and patience.

Yours Sincerely,

-----  
Mohammad Shahidul Islam Khan  
ID: 13364056  
MBA Program  
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## ACKNOWLEDGEMENT

At the very beginning I would like to express my deepest gratitude to my supervising teacher Mr. Saif Hossain who has instructed me in the right way and given me proper guidelines for preparing this report on “***Challenges of Vehicle Tracking Business in Bangladesh***”.

I am very much obliged to my office Res Trading for their love, care and unconditional support. Moreover I am very much grateful to them who have helped me by providing information which was needed to fulfill this report by all facets.

So, again I want to express my admiration to all of them.

## EXECUTIVE SUMMARY

The growing use of Vehicle tracking Business in Bangladesh provides a developing prospect for the security necessity of Vehicle owners. According to BRTA (Bangladesh Road Transport Authority) the number of registered motor vehicle in Dhaka city is 7,97,184 up to March 2014. And the total number of motor vehicles throughout the country is 20,20,799. So the market size of online vehicle management system is vast. Realizing the importance of these issues some companies like Prohori, Monico Technologies Limited, Grameenphone, NITS, BDCOM are providing GPS based online vehicle tracking service but still now none of them are started to provide entire integrated Vehicle Management System which will be more useful for both the single user and also the corporate or fleet managing companies. The main target of this exploratory research is to find out the business opportunity for providing this type of service for the first time in Bangladesh. Then questionnaires will be administered through an online survey. Other approaches will be used for analysis are tabs, cross-tabs, chi-square, factor analysis, cluster analysis, etc. These statistical tools are used with the help of MS-Excel. The analysis from these tools helped gather useful insights upon what type of respondents we had, what attributes the consumers consider while making the purchase decision. The growing use of Vehicle tracking Business in Bangladesh provides a developing prospect for the security necessity of Vehicle owners. If VTS Providers know the factors affecting the Bangladeshi consumers' behavior, and the relationships between these factors and the mode of their business, then they can further develop their marketing strategies to convert potential customers into active ones, while retaining existing VTS customers. This research is a part of study, and focuses on factors which VTS Bangladeshi buyers keep in mind while buying such product in order to choose the right thing. This research will identify the present market scenario of vehicle tracking management systems & comparing the VTS providing firms with each other. This research found that; in spite of implementing or providing high-end technology based huge expensive product, if the firms can import and provide the customers with low cost Chinese VT devices, then they can easily reach to a huge number of new customers. This research also found that a great concern about the security among the vehicle owners is the solo most effective reason for the growth rate of VTS services. I also found that for new companies it will be more efficient for them if they just buy the required software instead of built them in house. After getting established in this sector they can develop their own systems. I also found that the great a firm have invested in this business the great their revenue earning becomes. So, new companies who are willing to enter in to this VTS sector have to invest a minimum taka. 2 crore. I also found that both SMS and online based services are must to provide, because internet penetration is very low in our country. Easy to use, secured, cost effectiveness and reliability are the four dominant factors which influence consumer perceptions of VTS products.

## **The Organization and Job**

Res Trading was established and registered in 2013 with its main office located in Dhaka. Their mission is to provide their products at the right time at the right place with zero tolerance. Their vision is to be referred as the most favorable company in the Steel, Rods, Cement, Stone trading industry. The principles and standards of Res Trading has made the company one of the most reputed trading organizations in Bangladesh and we are able to satisfy all our clients who are based in Dhaka, Chittagong, Rajshahi & round the country. They are the Supplier of Steel, Rods, Cement, Stone to roads & highways, industrial buildings, multistoried building, ware house, bridge & culverts and private buildings. It has some weaknesses also like- lack of adequate marketing, lack of training facilities for the employees and strong competition among the existing players of the industry etc.

Res Trading has accumulated a strong and healthy market trust through a simple principle that we follow:

1. Earn Trust with Business.
2. Res Trading is among the leading distributors of Steel, Rods, Cement, Stone in the whole country almost two years.
3. Res Trading has been providing support and services to all major industries, contractors and traders in the region.
4. Res Trading has flexible business in the field of distributorship. We almost supply the above mentioned products of any producer of Bangladesh.(e.g. BSRM, KRMS, AKS TMT Bar, Seven Circle, Scan Cement, Lafarge Surma Cement).
5. In order to cope up with the huge demand of the market, Res Trading trades material from abroad.

As an accountant and financial executive often spend my day analyzing various accounting records. And analyze reports that include income statements and balance sheets. They then use these financial statements to compare the current year performances with previous years. In addition, An account executive is a sales professional also performs a variety of duties aimed at managing my employer's client relationships, as well as developing new business from existing clients. In most environments, a business executive actively seeks out new clients.

Essential Duties and Responsibilities include the following:

1. Manage and oversee the daily operations of the accounting department
2. Compiles and analyzes financial information to prepare entries to book of accounts, such as general ledger accounts, documenting business transactions
3. Standard journal entries
4. Analyze daily banking transactions and journal entries
5. Reconcile sub-ledger accounts (such as inventory).
6. Payroll reconciliation
7. Prepare monthly sales reports into excel spread sheet for analysis
8. Verify and reconcile contracts, orders, and vouchers, and prepares reports to substantiate individual transactions prior to settlement.
9. Monitor compliance with generally accepted accounting principles and company procedures.
10. Reviews, investigates, and corrects errors and inconsistencies in financial entries, documents, and reports.
11. Provide advice and assistance and early warning of such problems as cost overruns, excessive charges, and potential penalties. Develop models to depict financial and related activities tailored for specific operations.
12. Will be cross trained in other duties

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# Chapter One

## Introduction

## **1.1 Vehicle Tracking Service**

Effective GPS vehicle tracking software provides detailed reporting, mapping and more. While your GPS tracking devices gather information regarding the location, arrival times, departure times, speed and direction of your entire fleet, your fleet tracking software brings all of the information together in the form of mapping and reporting allowing you to make sense of your fleet's activity.

A **vehicle tracking system** combines the use of automatic vehicle location in individual vehicles with software that collects these fleet data for a comprehensive picture of vehicle locations. Modern vehicle tracking systems commonly use GPS or GLONASS technology for locating the vehicle, but other types of automatic vehicle location technology can also be used. Vehicle information can be viewed on electronic maps via the Internet or specialized software. Urban public transit authorities are an increasingly common user of vehicle tracking systems, particularly in large cities.

## **1.2 How Does GPS Vehicle Tracking Work?**

GPS vehicle tracking systems are not all the same. Depending on the specific functions of your fleet, you could require one of two types of vehicle tracking systems. To make that decision, it helps to understand how GPS tracking works. Below, find information regarding the mechanics of GPS vehicle tracking, as well as the primary differences in vehicle tracking methods. As always, contact Track Your Truck with any questions you have regarding GPS vehicle tracking systems, software and devices.

## **1.3 How Does GPS Work?**

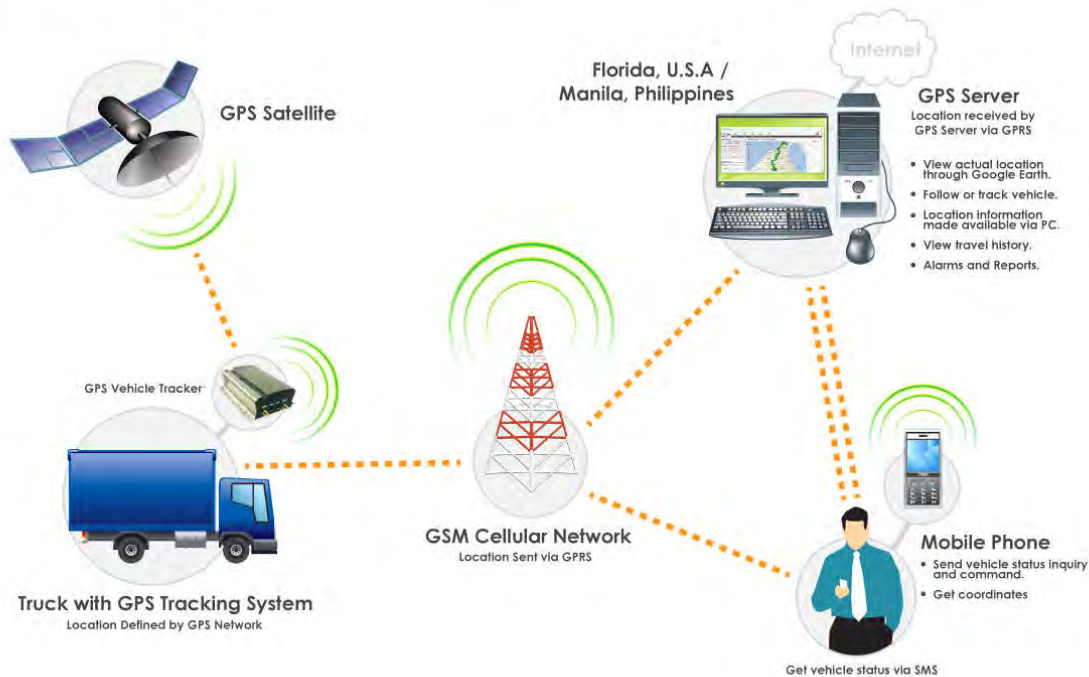
The simple answer is that orbiting satellites watch your vehicle from above. However, it's obviously a bit more complex than that. According the U.S. Department of Defense, 24 satellites orbit the Earth and transmit signals to the ground (additional satellites are on standby but are not actively in use). Each orbits the planet every 12 hours, and they are strategically placed for impressively accurate triangulation.

## **1.4 What Is Triangulation?**

To fully understand how GPS tracking works, we should have a basic understanding of triangulation. In short, this method requires at least three active satellites but can view as many as twelve simultaneously. On the ground, a gps tracking device receives signals from the GPS satellites whereby each satellite knows the exact distance from the other satellites in its proximity. Depending on the time it takes for a signal to reach the device from each satellite, the GPS receiver can calculate its exact location on the ground.



# GPS Vehicle Tracking System



**Fig 1: Basic VT systems**

## 1.5 How Precise Is GPS?

Considering the distance a signal must travel – from space – the accuracy of GPS tracking is remarkable. If you have ever used a handheld GPS device, you know that your tracking dot can pinpoint whether you are at an intersection or between two blocks. GPS devices can tell you you're location within just a few dozen feet. The accuracy of the GPS device depends largely on atmospheric conditions, the speed you are traveling, your location and the type of GPS vehicle tracking device you are using – which brings us to our next point.

## 1.6 Why VTS is so important:

**Increase vehicle safety and security:** Vehicle Tracking Services will increase vehicles and driver Safety. In case of an emergency the driver or the passenger can press the Panic Button to alert the vehicle owner.

### Reasons for getting VTS popular :

The security of the vehicle is the primary concern of all vehicle owners. It becomes necessary to track vehicle when it goes on road. It can meet with an accident or may be some theft. No one

can always call a driver but there are chances that may get false information. This system enables the owner to closely monitor and track the vehicle also allowing him to check the history of vehicle movements. Vehicle tracking system has done wonders in maintaining the security of vehicle.

**Ensure operational efficiency:** The service will allow managing and controlling the vehicle from a central point that helps to reduce fuel and maintenance costs and ensure operational efficiency

**Reduce unauthorized vehicle use:** The service allows to set rules against ‘Speed Violations’ and ‘Harsh Braking’ and helps to implement discipline against the drivers thus reduces the possibilities of rough and dangerous driving and unauthorized vehicle use.

**Operational Control:** The service may also reduce excessive ‘Idle Time’ and ‘Overtime claims’ that mainly happens with companies with large number of vehicles.

**Stolen Vehicle Recovery:** The service will allow the vehicle owner to track his/her vehicle through web or mobile. Using this service will increase the chances of recovering stolen vehicle.

**Asset Management:** Cargos and assets can be watched on a constant basis.

**Driver location management:** Through the LBS offer, a vehicle owner/user can obtain the general location of a driver reporting to him (based on SIM/RUIM location via BTS coverage area), so he can monitor the driver/driver pool more efficiently. This system can also be used for managing Roaming Field Force efficiently.

**Statement of important cases recorded in DMP  
May-2014**

Dacotty	Robbery	Murder	Kidnapping	Vehicle Theft	Speedy trial	Narcotics	Women Repression	Children Repression	Molam Party
2	21	21	17	53	24	556	132	16	-

**Statement of Illegal Arms and Ammunitions Recovered by DMP**

Total Case	Arrest	Name and Number Recovered Arms and Ammunitions	
21	50	1. Local made Pistol-1 3. Foreign made Pistol- 8 Magazine-8	2.Foreign made Revolver-1 4. Other Arms-27 7. Cocktail -31 5. Bullet-69 rds 8. Petrol-500 ml

**Statement of Narcotics Recovered by DMP**

Total Case	Arrest	Name and Number Recovered Arms and Ammunitions	
556	689	1. Phensidyl - 2526 bottles 7.5 litre 2. Gaza- 178 kg 10 gm, 155 puria 3. Heroin-622.5 gm, 298 puria 4. Foreign wine- 45 bottle,	5. Local wine- 36 bottles 73 ltr. 6. Beer- 112 Can 7. Yaba Tablet- 9658 pcs 8. Ampule Injection- 3456 pcs 9. Chola wine -51.5 ltr. 10. Pathedrin Injection-9 pcs

**Statement of Vehicle theft (Recovered by DMP)**

Vehicle Theft Case	Number of Stolen Vehicle	Arrest	Vehicle Recovery	Type of vehicle and Amount of Recovered theft Vehicle
53	53	36	20	1. Private car- 12 2. Microbus-01 3. CNG- 02 4. Jeep/pickup-01 4. Motorcycle- 04

**Fig 2: DMP crime chart**

## 1.7 Objectives of the Report

To identify the present challenges and importance related to the vehicle tracking business in Bangladesh.

## 1.8 Research Methodology

- **Open-ended questionnaire:** The survey was answered by the company's managerial level staffs. Respondents were asked for how long time they are operating this business. This question was included to be able to find differences in experience based on the level of revenue earning of the respondents. The amount of investment is also judged, because we think that the larger a company is the more earnings it can collect. we also tried to know the maximum selling device. By this the tendency of customers can be noticed.

### Measurement Technique:

To record the data the following measurement techniques would be used:

- **Rank order scale**

This scale would be used to find out how the respondents perceive the features for vehicle management technology. A rank order scale is a survey question tool that measures people's preferences by asking them to rank their views on a list of related items. Using these scales can help our business establish what matters and what doesn't matter to either external or internal stakeholders. We can use rank order scale questions to evaluate customer satisfaction or to assess ways to motivate our employees, for example. Rank order scale can be a source of useful information.

- **Itemized non-comparative rating scale**

Respondents would rate certain attributes of VTS on a scale with positions from extremely influential to not at all influential. The respondents do not make use of any frame of reference before answering the questions. The resulting data is generally assumed to be interval or ratio scale. It will help us to meet our objective because itemized non-comparative rating scale is structured and standardized. This allows ratings to be easily compared and contrasted - even for entire workforces.

## 1.9 Data Analysis Technique

The data collected from the exploratory research provided us with the different factors of a vehicle owner currently facing to manage his fleet and also the factors which are offered by the new vehicle management system. Based on these responses, the questionnaire is used to do factor analysis to reduce the number of attributes handled into fewer attributes, so that handling of factors becomes easier for subsequent analysis. To determine the profile of various users so that we can know more about their uses, attitudes and preferences so as to gain an insight on the features for vehicle management system, we will use cluster analysis, a segmentation technique. These various techniques would be carried out the help of software like MS-Excel.

### **1.10 Limitation of the study**

Like any other study, the limitations of the study are not out of questions. Some information could be more confidential for the system. So, internal and sensitive information might be difficult to find. The limitations of online qualitative work are fairly obvious, particularly to those familiar and comfortable with the traditional qualitative process. Some information we cannot verify from the online process.

### **1.11 Countries Using Vehicle Tracking Service:**

Almost all the countries are now using vehicle tracking devices. Among them Bangladesh has few companies and most of them are mobile operator companies who are providing this service.

### **1.12 tracking system in Bangladesh**

Now in Bangladesh twenty companies including the followings organizations are providing VTS services:

1. NITS Service (Pvt.) Ltd-- NitolNiloy Group--[www.nits.com.bd/](http://www.nits.com.bd/)
2. Microtech GPS Tracking System--[www.microtechbd.net/](http://www.microtechbd.net/)
3. Monico Technologies—Product name FINDER
4. Nexdecade Technology (pvt.) Ltd.
5. Prohori Vehicle Tracking System--[www.pilabsbd.com/](http://www.pilabsbd.com/)
6. Talukder Vehicle Tracking System
7. BDCOM-- [www.bdcom.com](http://www.bdcom.com)
8. Grameenphon

# Chapter Two

## Literature Review



Coifman (1998) argues that, the quest for better traffic information, and thus, an increasing reliance on traffic surveillance, has resulted in a need for better vehicle detection such as wide-area detectors; while the high costs and safety risks associated with lane closures has directed the search towards non-invasive detectors mounted beyond the edge of the pavement.

The benefits the adopting the VTS in that the traffic system could be used as an effective management tool for vehicle utilization, driver behavior, increasing efficiency and productivity and addressing environmental issues. The benefits of the Vehicle Tracker System were reported as follows:

- By Period 8 of 2009/10 there had been a 6.68%, saving on fuel consumption.
- Improve customer service through increased visibility and improved communication.
- Ability to keep jobs on schedule by reacting immediately to unforeseen circumstances.
- Increase teamwork for more effective workflow.
- Ability to manage the team's resources more efficiently.
- Monitor the team's activity in real-time, ensuring customer service is maintained.

Ramanil and Valarmathy (2003) argue that, remote monitoring system based on SMS and GSM is most effective. Based on the total design of the system, the hardware and software designed. The GSM network is a medium for transmitting the remote signal. This includes two parts that are the monitoring center and the remote monitoring station. Business can use these two technologies simultaneously. The monitoring centers consist of a computer and communication module of GSM. The software-monitoring center and the remote monitoring station implemented. The result of this demonstration shows that the system can watch and control the remote communication between the monitoring center and the remote monitoring station.

Bangladesh Telecommunication Regulatory and Commission (2008) illustrated in 'Regulatory and Licensing Guidelines (Amended) for Issuing License for Establishing, Operating and Maintaining Vehicle Tracking Services in Bangladesh' (No. BTRC/LL/Vehicle Tracking (311)/2008-277) --that all the necessary aspects before establishing and providing VT support. It stated that, These guidelines will provide an overview of the service as well as act as a framework to govern the organizations and Cellular Mobile & BWA Operators that intend to

offer Vehicle Tracking Services in Bangladesh. Organization shall be allowed to offer Vehicle Tracking Services in Bangladesh without obtaining license from the Commission by following the procedure as described in this Regulatory and licensing guidelines. Under the existing licenses Cellular Mobile & BWA Operators qualify to offer such telecommunication services subject to the Commission's permission including tariff approval. The Vehicle Tracking System would be a useful solution to gain considerable operational efficiency in managing a large fleet of vehicles. It will help mitigating the major safety concerns that exist in the transport sector in Bangladesh. The service will offer its customers an innovative Vehicle Tracking and management solutions that will bring efficiency in their vehicle fleet operations. Vehicle Tracking System will allow offering of a range of services, like managing fleet of vehicles, locating roaming sales professionals and tracing stolen vehicles in an easier, productive and efficient manner. It will create opportunities for new businesses and employments, benefit the government and corporate bodies, road transport industry, motorists, vehicle owners and individual private users by helping them to reduce road traffic accidents and unauthorized or inefficient vehicle usage and as well as generate revenue for the exchequer. The use of a simple cost-effective Vehicle Tracking Solutions will certainly increase productivity, reduce operational cost, improve customer service and enhance security for both driver and vehicle.

# Chapter Three

## Vehicle Tracking Companies in Bangladesh

<b>Company Name</b>	<i>NITS Service (Pvt.) Ltd</i>	<i>Microtech GPS Tracking System</i>	<i>Monico Technologies Ltd.</i>	<i>Nexdecade Technology (pvt.) Ltd.</i>
<b>Product brand name</b>	NTrack	Microtech	(FINDER)	
<b>BTRC License number</b>	BTRC/LL/Vehicle Tracking(03) NITS/2009-3, Dated: 21/06/2009	BTRC/LL/Vehicle Tracking(17) Micro/2011 - 14 Dated: 11/07/2012	BTRC/LL/Vehicle Tracking(20) Monico/2012-15 Dated: 06/02/2013	BTRC/LL/Vehicle Tracking(05) Nexdecade/2009-4 Dated: 04/08/2009
<b>Product Origin</b>	Taiwan	China	China	China
<b>Software Development</b>	In house own team	In house own team	In house own team	In house own team
<b>Software Development</b>	Nationwide 12 nos own service network			
<b>Address</b>	NITOL CENTER 71, Mohakhali Commercial Area Dhaka-1212, Bangladesh	House # 9, Road # 14, Sector # 3, Uttara C/A(JasimUddin Road, Dhaka-1230, Bangladesh.	House-769, Sat Masjid RoadDhanmondi, Dhaka-1209 Bangladesh	44F/6, Flat-402 ,Tejtori Bazar Chwak (West Panthapath) Tejgoan, Dhaka Post code-1215;Bangladesh.
<b>Contact#</b>	Phone: 880 2 9887074-6 Fax: 880 2 9883121	+88 01914 221446 , +88 0193 8888 996 ,+88 0198 5505905, +88 0167 6464667 <i>Quick Contact FOR GPS : +88 0167 6464667</i>	880-2-8157212	+88-01917778444 ( Marketing )
<b>email</b>	<a href="mailto:nita@citechco.net">nita@citechco.net</a>	<a href="mailto:info@mtbd.net">info@mtbd.net</a> , <a href="mailto:info@microtechbd.net">info@microtechbd.net</a> ,	<a href="mailto:info@finderlcom">info@finderlcom</a>	<a href="mailto:support@ne">support@ne</a>

<b>Website</b>	<a href="http://www.nits.com.bd/">www.nits.com.bd/</a>	<a href="http://www.microtechbd.net/">www.microtechbd.net/</a>	<a href="http://www.finderbd.com">www.finderbd.com</a>	<a href="http://www.nexdec">www.nexdec</a>

<b>Company Name</b>	<i>Grameenphone</i>	<i>Talukder Vehicle Tracking System</i>	<i>Prohori Vehicle Tracking System</i>	<i>BDCOM</i>
<b>Product brand name</b>	.....	.....	.....	.....
<b>BTRC License number</b>	BTRC/LL/Vehicle Tracking(01)G. P./2009-1Dated: 17/06/2009	BTRC/LL/Vehicle Tracking(19) Talukder/2012-16Dated: 07/03 /2013	BTRC/LL/Vehicle Tracking(6 ) Pilabs/2011-13 Dated: 06/02/2012	BTRC/LL/Vehicle Tracking(15) BDCOM/2010-11 Dated: 25/01/2011
<b>Product Origin</b>	<u>China</u>	<u>China</u>	<u>Taiwan</u>	<u>China</u>
<b>Software Development</b>	In house own team	<u>Purchased</u>	In house own team	In house own team
<b>Address</b>	GP HOUSE,Bashundhara-Baridhara,Dhaka; 1229 Dhaka, Bangladesh.	JamunaFuturePark;Level 4, Zone A-025;KA 244. PragatiSharani Kuril, Baridhara. Dhaka 1229;Banglade242,	Pi Labs Bangladesh LTD. ARA Bhaban(3rd Floor)39, KaziNazrul Islam Avenue,Kawran Bazar, Dhaka Bangladesh.	RANGS Nilu Square (5th floor), SatmosjidRoad;House # 75, Road # 5/A, Dhanmondi R/A;Dhaka-1209,

		TejgoanIndustrial area, Tejgoan, DhakaPower Tech: Plot # 411, Coca-Cola Road, Baridhara, Nodda, Dhaka- 1229		Bangladesh
<b>Contact#</b>	880-2-7171157	+88027913062- 65	+88-02-8152474	+88 09 666 333 666
<b>email</b>	greenfuel@gmail.com	info@talukderict.com	info@pilabsbd.com	office@bdcom.com
<b>Website</b>	www.grameenphone.com	www.talukderict.com	www.prohoritracking.bd	http://www.bdcom.com

# Chapter Four

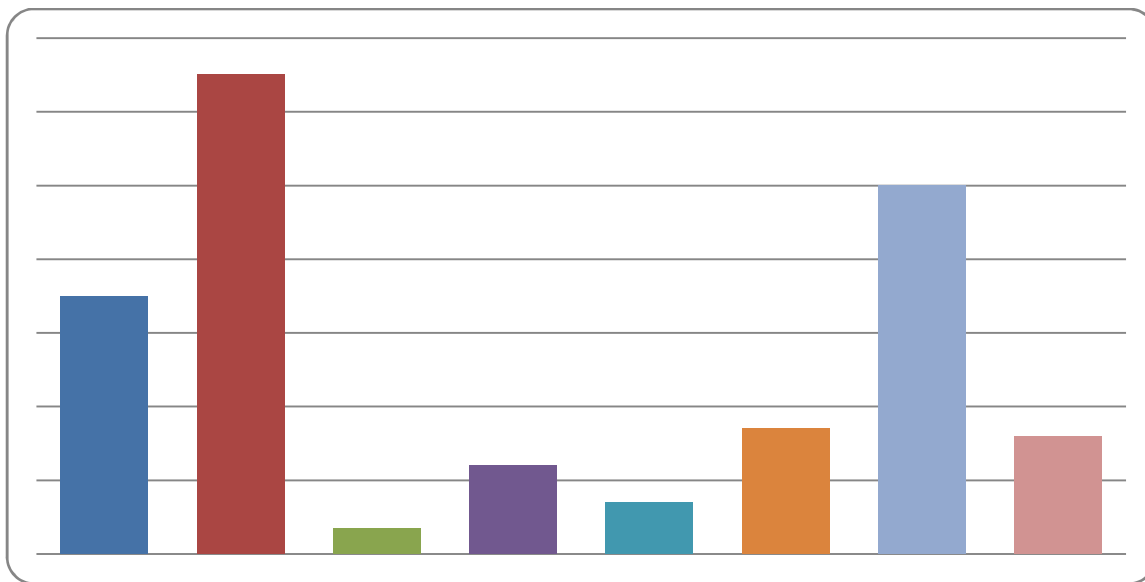
## Analysis of the Study

## 4.1 Empirical findings of survey

Vehicle tracking is one of the fastest growing satellite navigation applications today. Tracking systems employ a combination of GPS, cellular, and other electronic technologies to enable a vehicle to communicate its location and condition to an outside source. Vehicle-tracking systems are often called by other names such as automatic vehicle location-monitoring systems or position-reporting systems. In Bangladesh there are about 26 companies have got the licenses from BTRC (Bangladesh Telecommunication regulatory Commission) among them nearly 8 companies are currently plying in the Vehicle Tracking Business Sector.

## 4.2. Financial Challenges

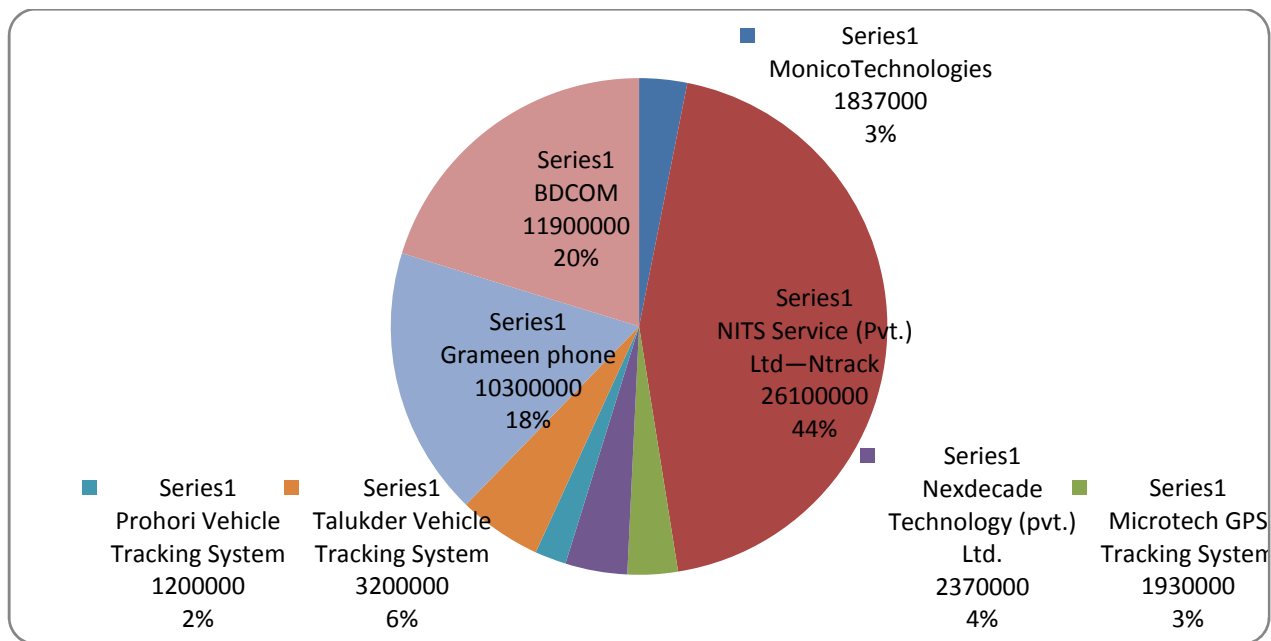
Initial investment is a great burden for new comers. We can see that two big companies named Nitol-Niloy and Grameen Phone, could invest a huge amount of money. Because VT business was not their main businesses. Nitol-Niloy was basically a motor vehicle importing agency, which imports vehicles, like trucks, lorry, pick up vans etc. and Grameen Phone is a company of cell phone operations.



**Fig 3: Initial Investment**

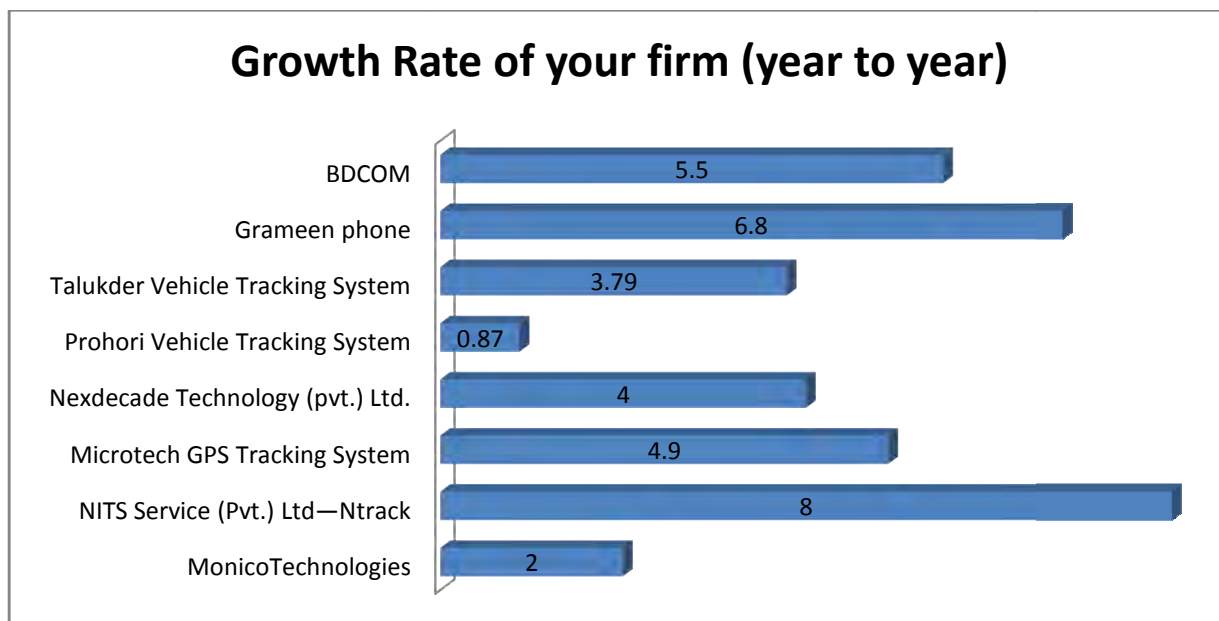
That's why they could managed a huge amount of money for investing in VT business. But it is quite impossible for personal investors to accumulate such amount of money.





**Fig 4: Financial relativity of several VT companies**

Here we can see that Nitol-Niloy has earned nearly 26.1 million taka. They are the oldest vehicle tracking company in Bangladesh. That is why they could managed to consume the largest amount of customers throughout the country.

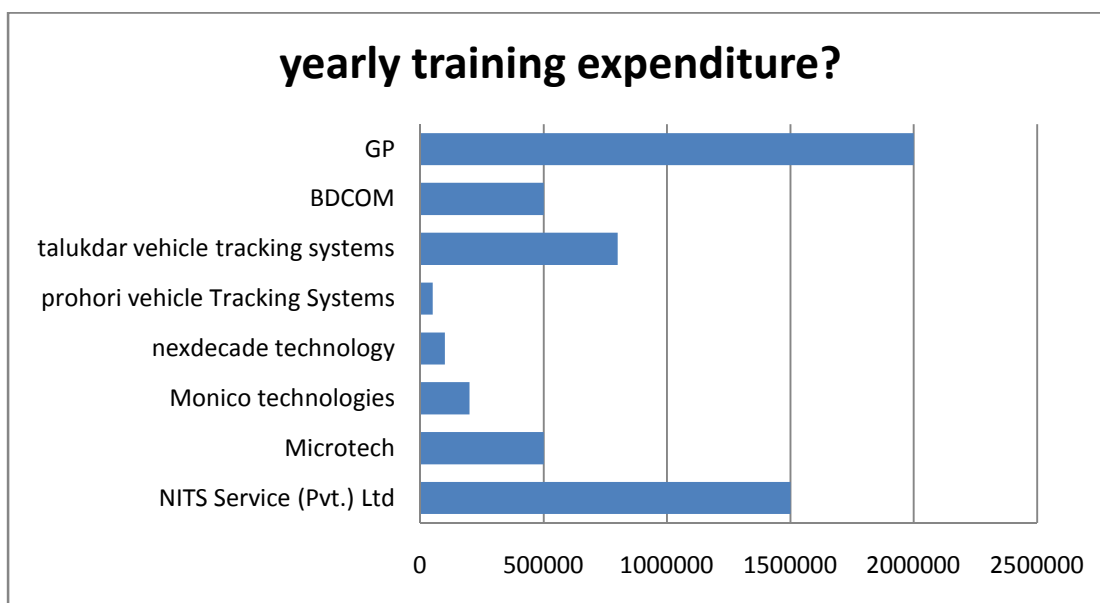


**Fig 5. Growth rate of VT firms**

I found that the highest revenue earning firm, which is NITS Service (Pvt.) Ltd—Ntrack, observes the highest rate in growth rate. Then 2<sup>nd</sup> position is gained by GP tracking business.

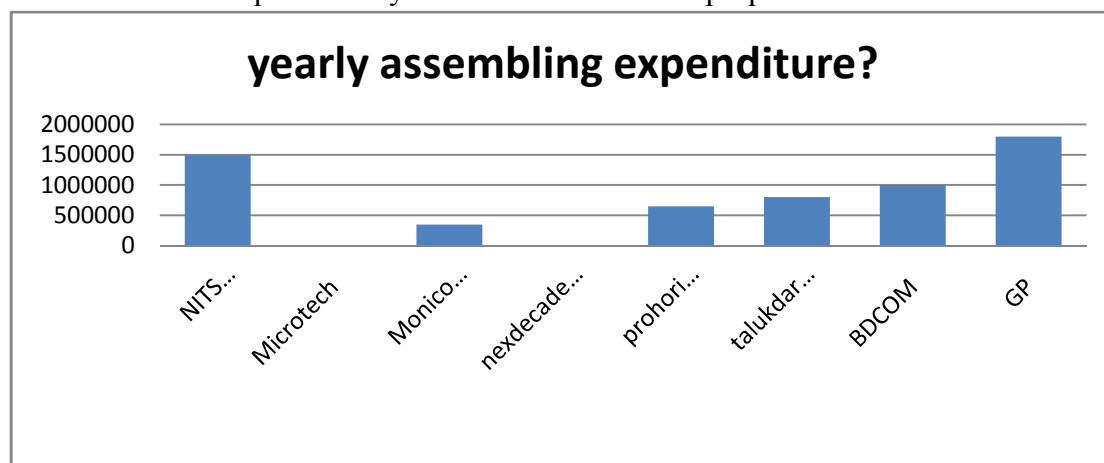
This also makes clearer that the more investment the more growth. So the upcoming companies who tend to be entrepreneur in the near future must be able to accumulate sufficient fund.

Since trained people are not available for vehicle tracking business, so VT companies have to expend a lot of money for trained their employees up. Yearly Grameen Phone expend about 2000000 taka for this purpose. 1500000 taka goes out for this purpose from Nitel-Niloy company.



**Fig 6: yearly training expenditure**

6 out of my 8 surveyed companies does have in house assembling facilities. And we can see that Grameen Phone expend nearly 1800000 taka for such purpose.

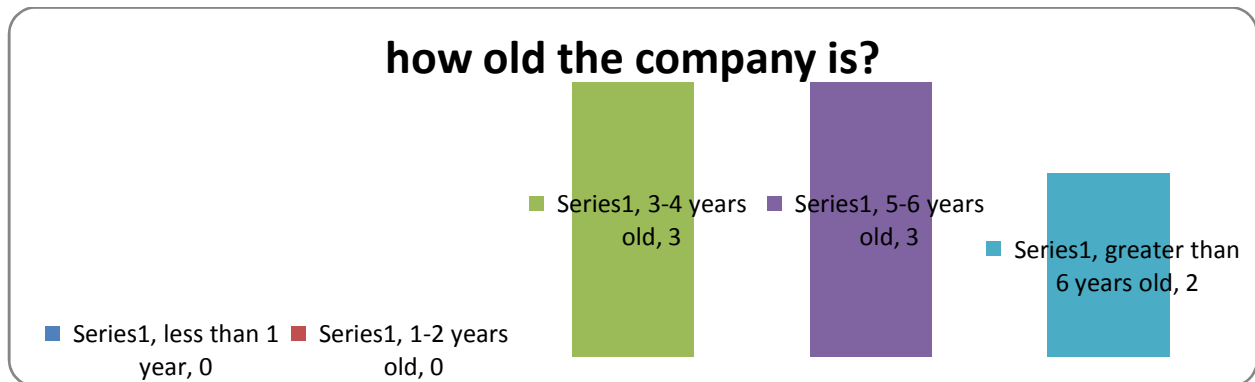


**Fig 7: yearly assembling expenditure**

The other companies have to expend from Tk. 350000 to 1500000 according to their size.

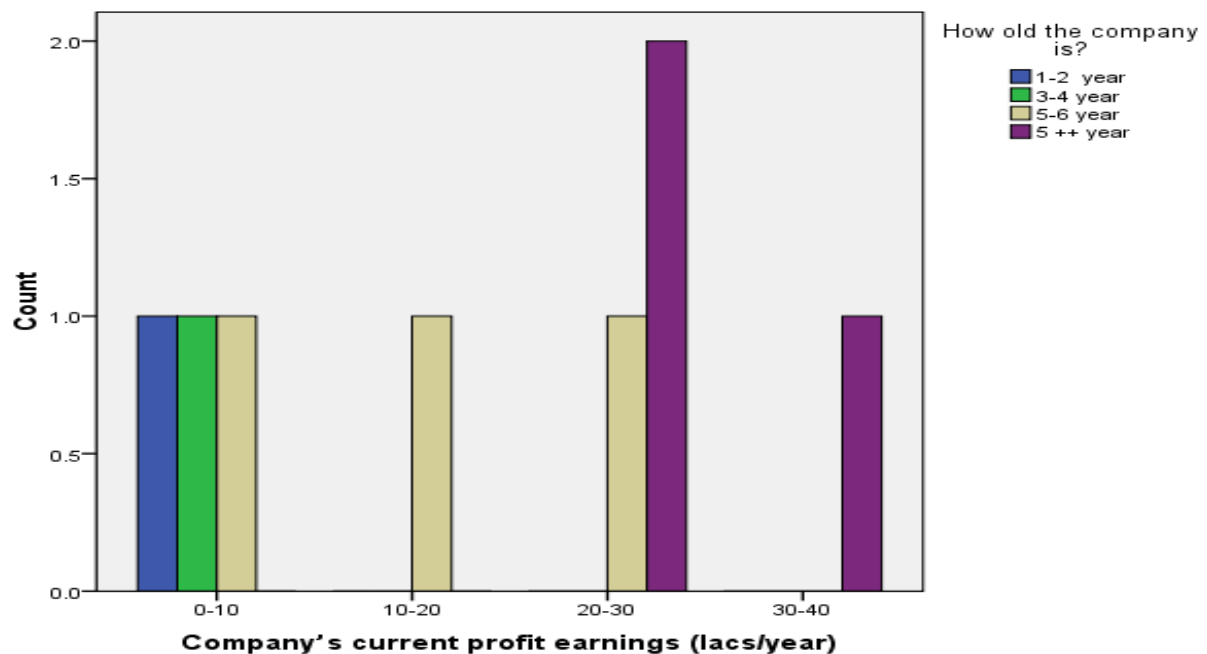
### 4.3. Experience related Challenge

The operating experience of Bangladeshi VT companies is not longer than 12 years. Only two companies are operating more than 6 years. This shows that our business of this sector is not so experienced. Companies have to increase their competency level. They can do such by the more time they will expend in the sector. Only experienced and old companies in any sector can realize the proper customer mentality.



**Fig 8: companies operating experience**

Here we show the relationship between the age of the company and the profit. Here we found that the most old firms are being fetched the highest rate of income.

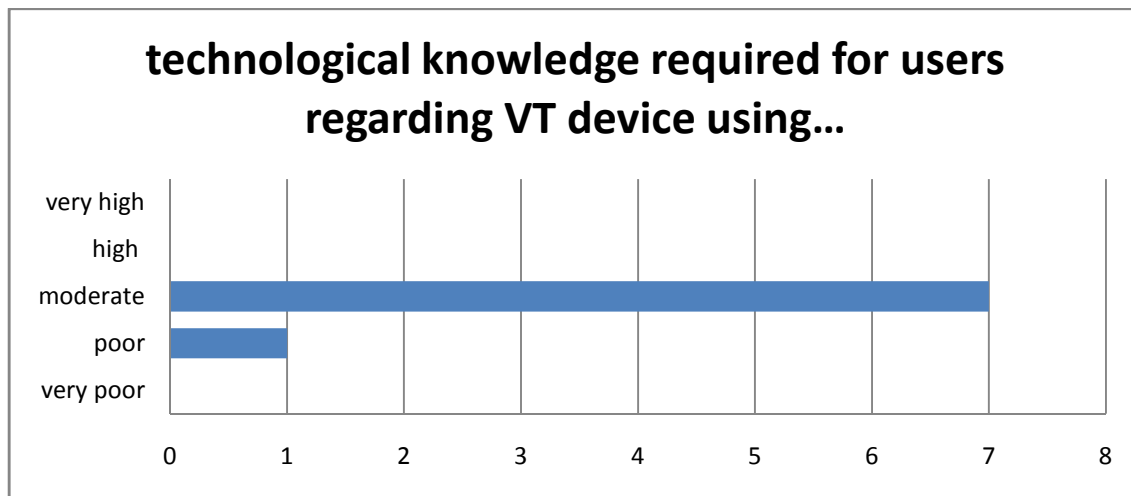


**Fig 9: relationship between age with profit of VT companies**

That depicts that, a firm has to be more experienced in the VT field to be a potential player.

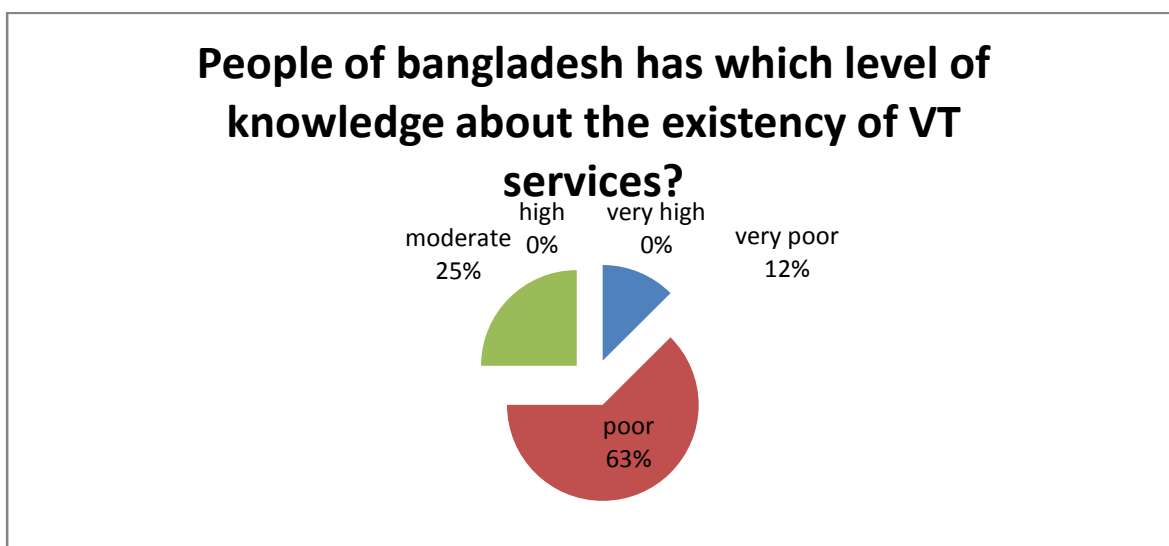
#### 4.4 Customer related challenges

Literacy rate is very poor in our country. And here a very little number of people are aware about technological use. In order to use VT service properly it is important for a user to know the basic use of internet accordingly.



**Fig 10: technological knowledge required for users regarding VT device using**

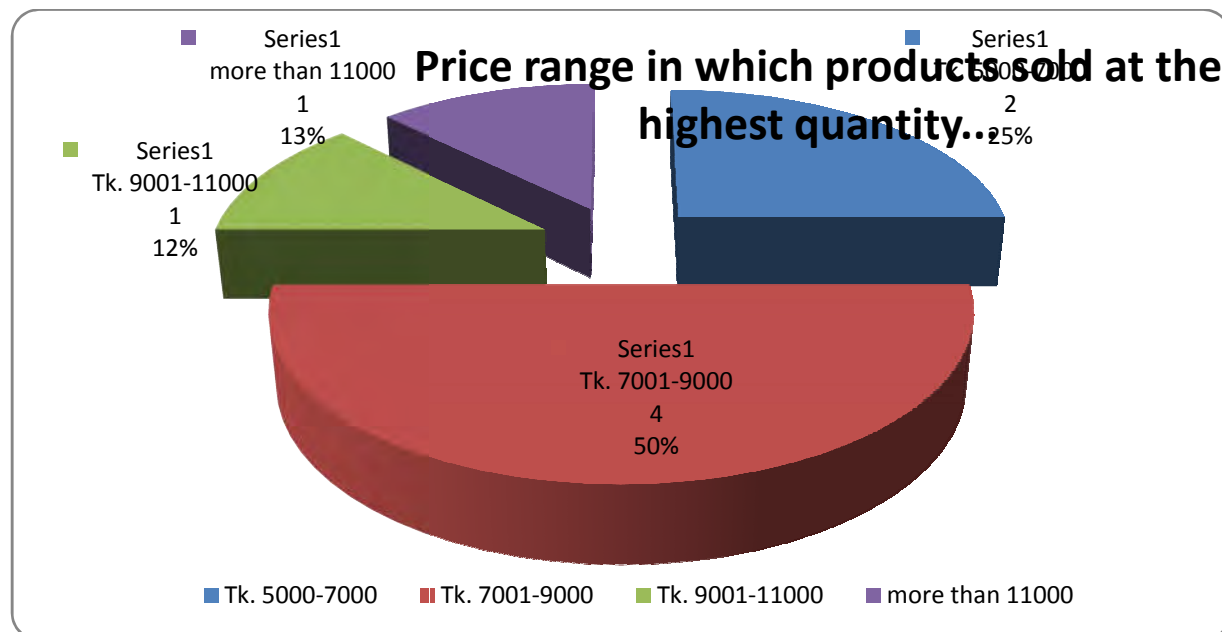
Vehicle tracking is a new business in our country. Many vehicle owners do not know about such services. As a result the growth rate is not so hopeful. Marketing about this service is also done at a poor level. So, any new comer in such sector, should be aware about the fact that it has to struggle for clients for a long.



**fig 11: existency of VT services known by people**

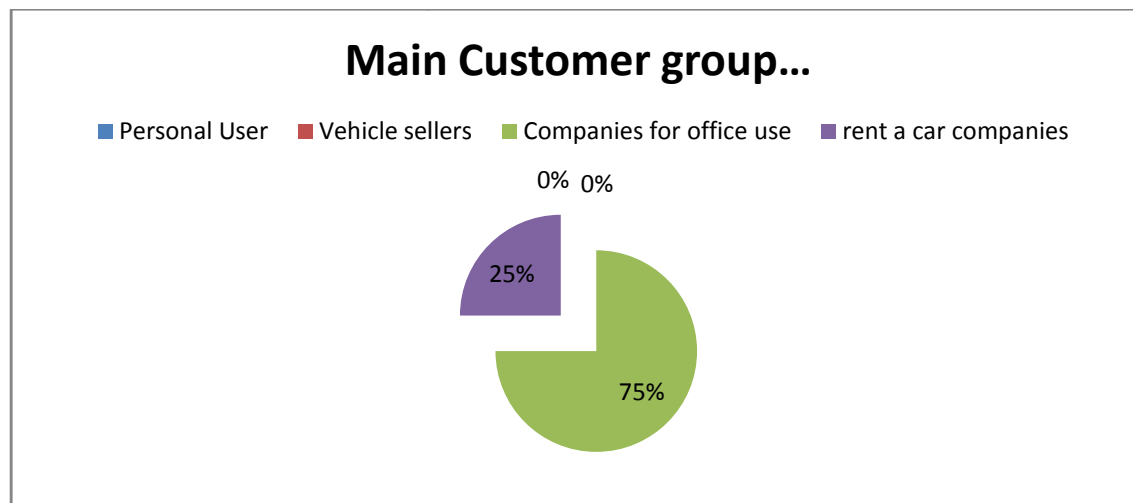
Now let's have a glance at the customers prone to the product which lies in some ranges. Here we can see that as we are a developing country so there is no scope for the companies to charge highly costing product. Customer tendency is to obtain middle but quality product. So here is another advice for the upcoming entrepreneur not to import or assemble highly costing product. Here China could be more efficient country in case of product importing. China also makes cost efficient product. So if any firm want to direct purchase VT devices, then it can do that from China.

Another aspect is that if they want to attract new vehicle owners to install VT device, then te new buyer group could be instructed from the previous ones. So mid level of expensive product should be emphasized.



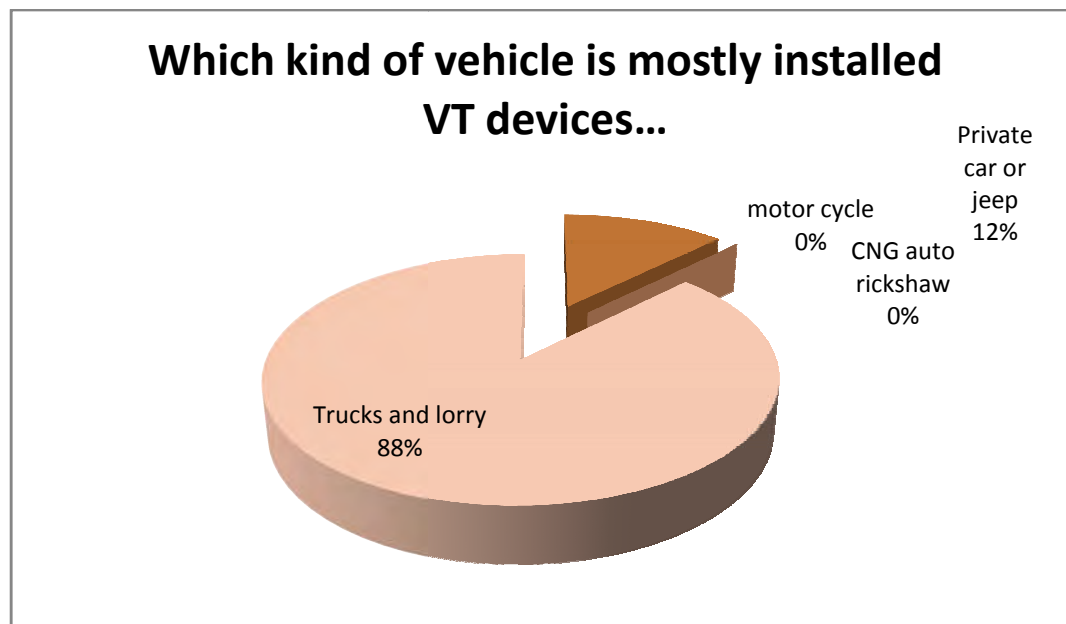
**Fig 12: Customers most favored price range**

Our another question was that, the group of customers which bought much VT devices. And I found that three fourth of the entire selling of VT devices, is purchased by companies. Second position is consumed by the rent a car business firms. In the “Fig2” we can see that a huge level of vehicle is being hijacked from DMP area. So owners of vehicle, like private car, jeep, micro bus etc. are using VT services. But in Bangladesh personal private cars is the highest number in motor driven vehicles.



**Fig 13: Main customer group**

As we saw in the figure the trucks and lorry are mostly conquered the area of installed VT devices. Nearly 75 percent of the entire vehicles which are installed with the VT devices are truck and lorries. Trucks and lorries are hugely plying throughout the county for business goods delivery purpose. Thus these sorts of vehicles are acquired a great level of security. As well as proper time management is also necessary for goods delivery, basically the export oriented goods must be forwarded to land or sea ports in timely. Then private cars consumed 25%.



**Fig 14: VT devices installed in various vehicles**

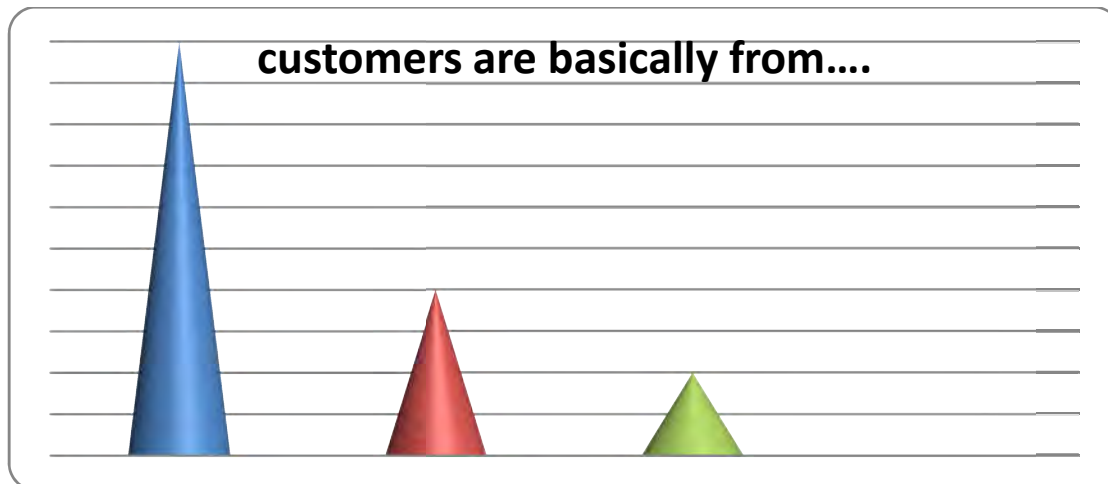
Let us have a glance to the figure given below, here we can notice that single users tend to buy VT products ranges from 5000 to 9000 and after that single users (that means vehicle tracking

devices buyers of private car, jeeps, micro bus etc.) not likely to buy more expensive devices, like in or country more than 11000 taka product is also available but single users are not willing to have them. Vehicle sellers are gradually tend to buy VT devices starting from 5 thousand and then rapidly grows towards 9 thousands. Then we can see a rapid decline in more costly devices. The reverse scenarios are seen about corporate clients, who bought VT devices for office vehicles. They are tend to buy more valued VT devices.



**Fig 15: relationship between client group with cost of product**

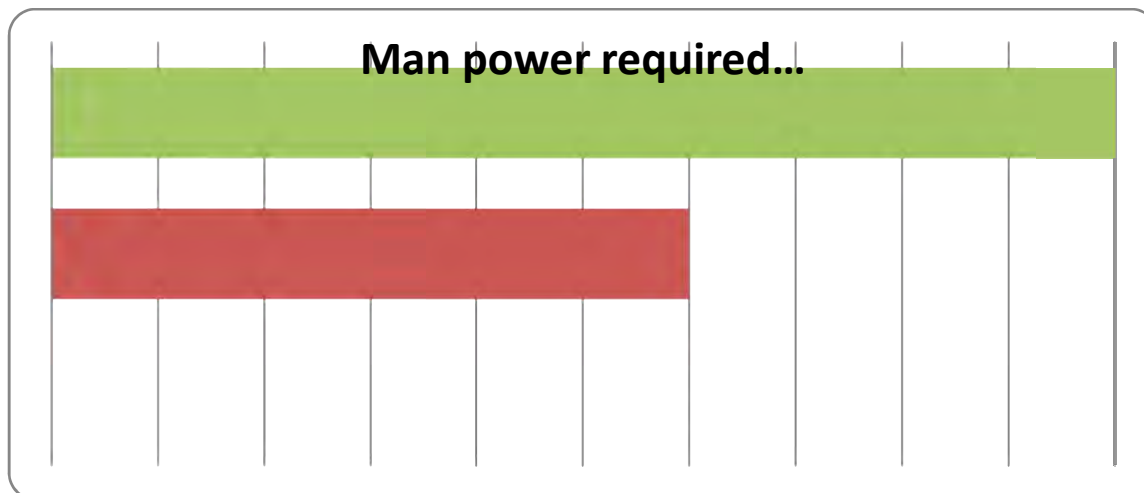
It is seen that most of the personal VT clients are based in metropolitan areas. That's why the metropolitan area based VT services is seen in Bangladesh. But tracking services is required not to bind in a specific geographic area, vehicles have to move here and there. So we can see that, clients are based in metropolitan areas basically from Dhaka.



**Fig 16: Customers are basically from..**

Here we have a suggestion for the upcoming entrepreneurs that they should focus on all geographical areas of the whole Bangladesh. Then they can reach towards a mass number of people who will be interested to afford VT services

#### **4.5 HR related challenges**



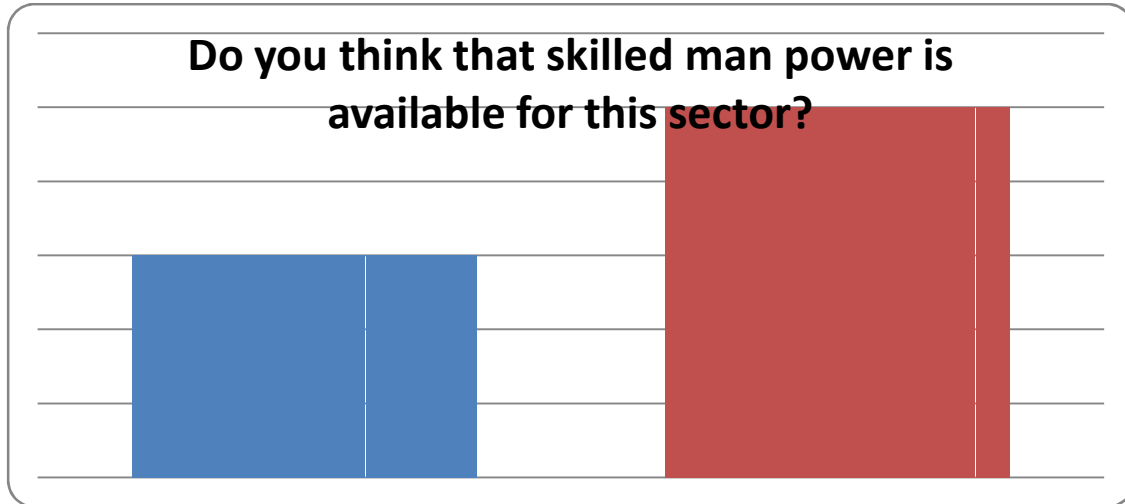
**Fig 17: Required number of employees**

We can see that this sector is greatly laborious. As 24/7 service is required so besides regular office hours some employees must kept on for service via phone or internet. That's why shifting duties (basically 3 shifts each one of 8 hours) is seen in every VT service provider's office.

Another aspect of man power for this sector is that, skilled people from several fields are required. Like BSc computer engineering, mechanical engineering, accounting, electrical and electronics engineering, diploma engineers from these fields as well.



In figure 18, we see that every companies are agreed about the fact that the requiring man power is not available in this field. So companies are tend to train their recruiters at first for couple of months. Basically since this systems is based on online, so a great training on the use of such online based software is given as primarily.

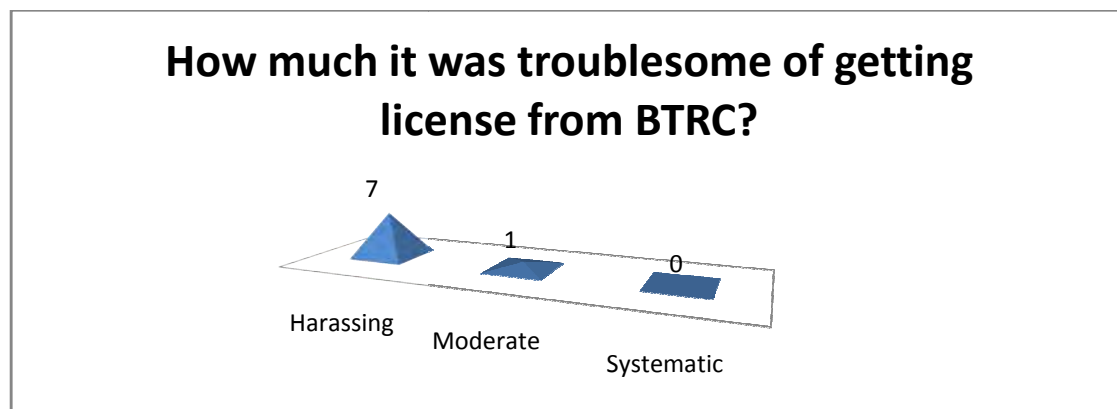


**fig 18 : man power availability**

The accounting systems are also based on software. Because the date about the clients expenditure, all are provided synchronize. So not only the technical persons but also the non technical employees also trained on the whole systems.

#### 4.6 Regulatory Authority Related Challenges

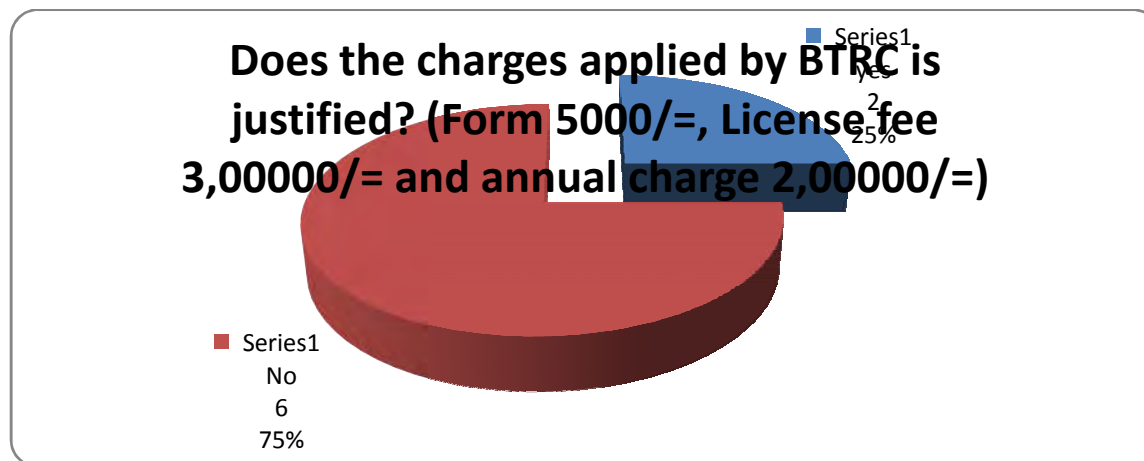
Anybody, who wants to invest in VT sector, must be alarmed that the government agency BTRC will provide license for doing such business after much harassment.



**Fig 19: License getting procedures from BTRC**

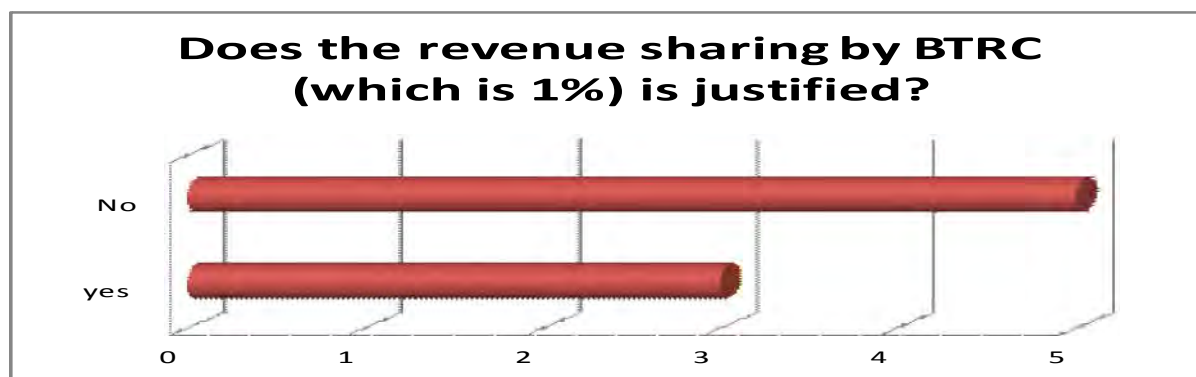
7 out of our 8 companies said that they had to go through bureaucratic hassles when they went BTRC for license. And so far I think that this is a great challenge for the VT services in our country.

We found that BTRC charges 5k for selling forms from the interested customers. After that when BTRC provides the license they charges 0.3 million taka. This is not the final stage. BTRC annully charges 0.2 million Taka from the firm. This may seem quite bearable for established companies but for new comers initial 3 lakh taka is not so little amount.



**Fig 20: charges applied by BTRC**

If a company earned 1 crore taka in a year then BTRC will fetch 1 lakh tka from the firm. We have investigated whether this proportion is justified or not. 62.5% interviewee answered that this amount is not justifiable. But other 37.5% is on positive side. Because, if BTRC charges a fixed amount of money to every company, then it would be torturous for such actions. Because each company earns an amount based on its capacity, big companies also earn big amount of profits.



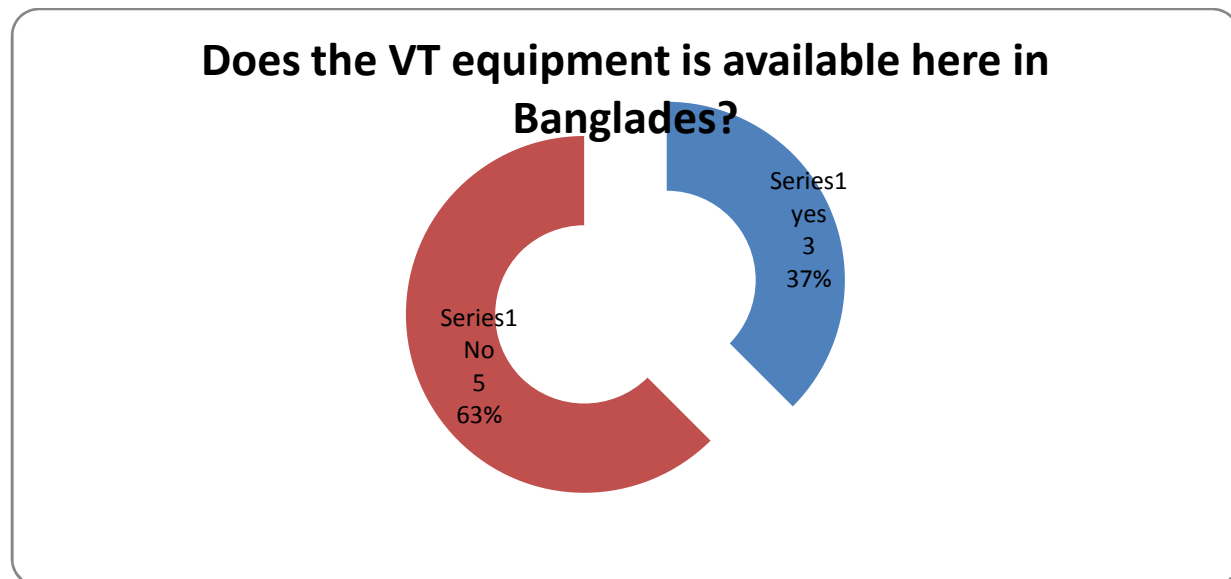
**Fig 21: BTRC profit sharing ratio**

Thus it is quite a good decision for BTRC not to charge a specific amount on VT companies. If any firm could not managed to earn not a single penny then the company does not need to give anything to BTRC.

#### 4.7 Production Related Challenges

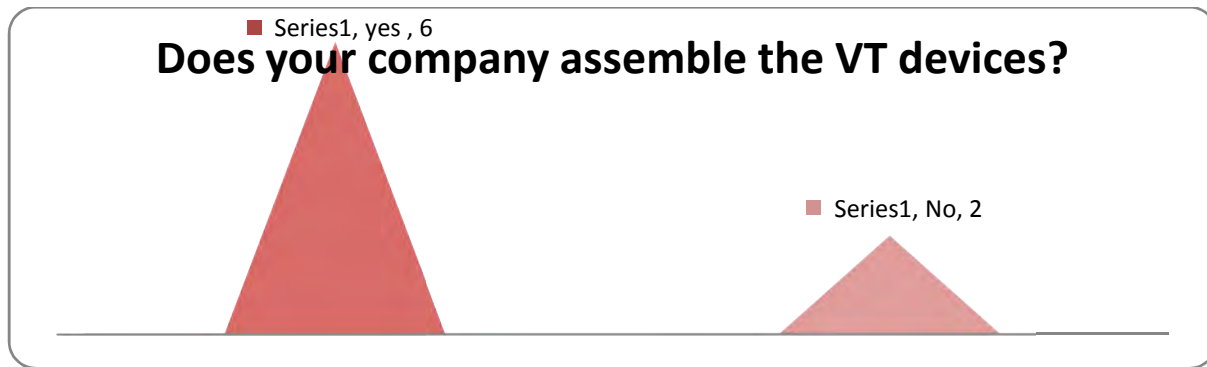
Basically VT companies buy raw materials from china. But some VT companies assembles here in Bangladesh. We can say Monico technologies Ltd. who imports all sorts of raw materials from china. Like, microcontroller, capacitors, GPS antennas, covers etc.

But the devices with latest technology cant be even assembled in Bangladesh. Then there will be no other way besides importing from abroad. High end devices are imported from Germany and the US.



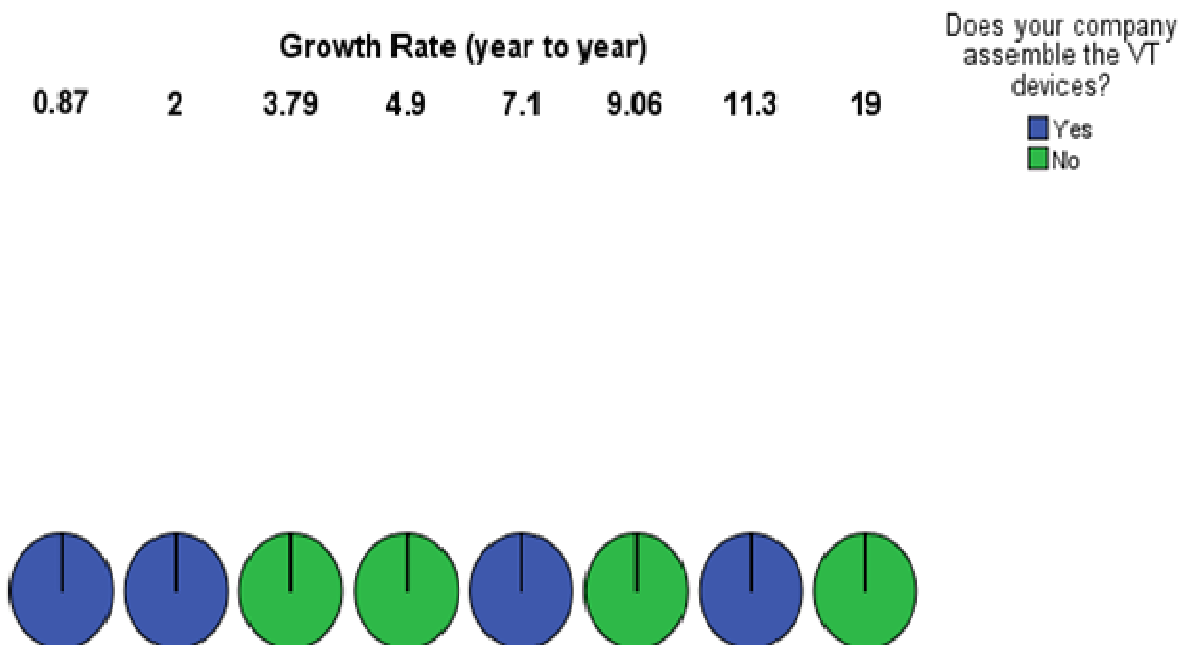
**Fig 22: availability of raw materials**

6 out of my 8 survey companies, enjoys the assembling facilities for their own. They said that instead of buying directly finished products, it is quite cheaper to assemble the product altogether in Bangladesh. But it will be a new burden for new entrepreneur to establish assembling plant. It considered as a challenge in Bangladeshi companies. Old and established companies can have such facility, but not easier for the new ones.



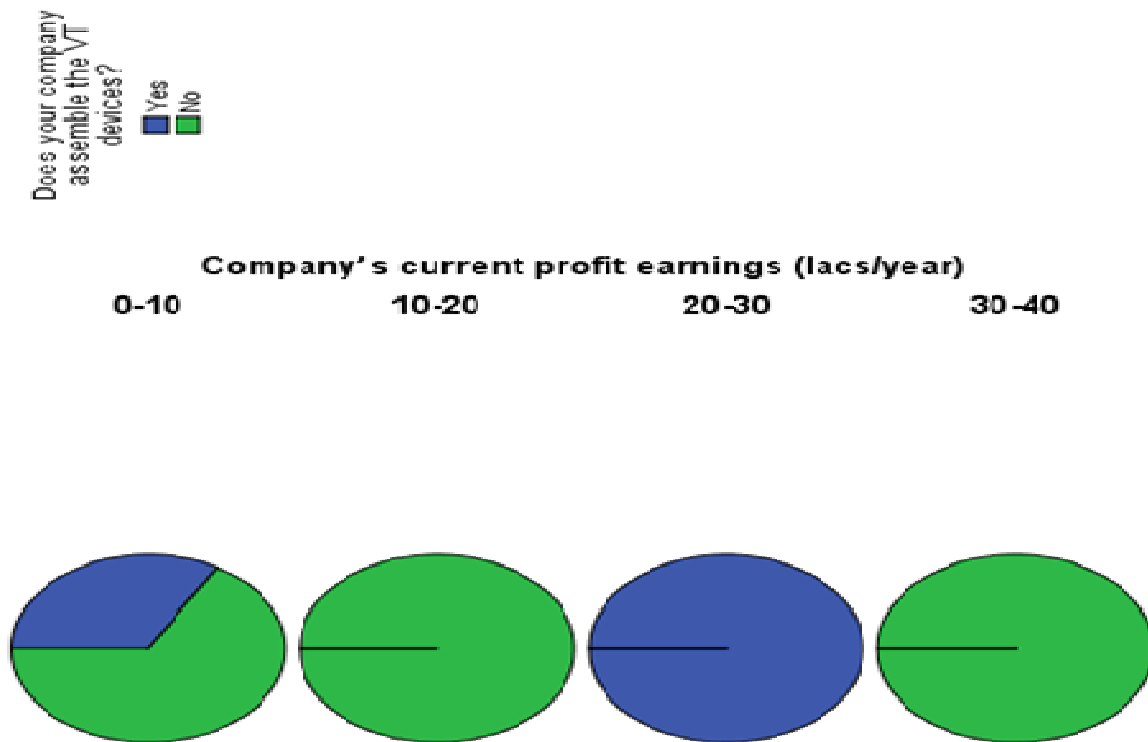
**Fig 23: assembling facilities**

Now, let us have a move to the figure below, it shows the relationship between growth rate of VT firms with assembling facilities. We can draw a conclusion from this SPSS figure that, small or large whatever the company might be, it may have its own assembling facility. But, here is an observation that, large organizations in VT sector nearly do not tend to have assembling units. they are tend to buy finished products from abroad basically from China.



**Fig 24: relationship between growth rate of VT firms with assembling facilities**

In the figure below we can see that, large revenue earning firms does not assemble VT devices at all. The only discrepancy is that there is only one point in which we can see the discrepancy has taken place. So from the above two figures we can draw a final conclusion that assembling facility is not a bare necessity for vehicle tracking firms. Without such facilities any companies can becomes the market leader.

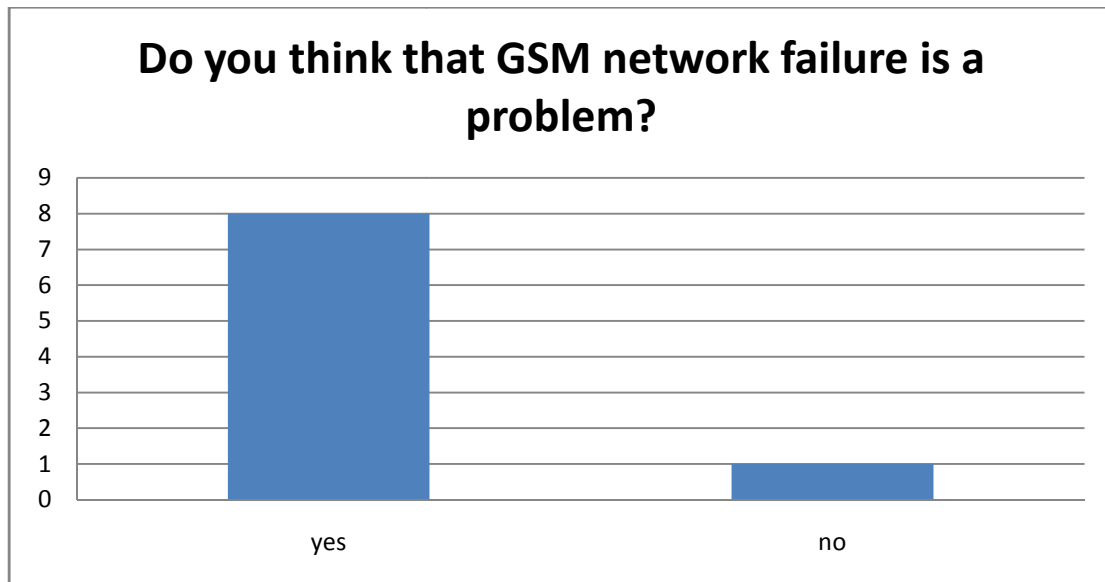


**Fig 25: relationship between revenue earning of VT firms with assembling facilities**

So, this is a good signature for new entrepreneurs that they can make a significant progress in installing VT companies. Because establishing an assembling plant is so challenging and costly endeavor.

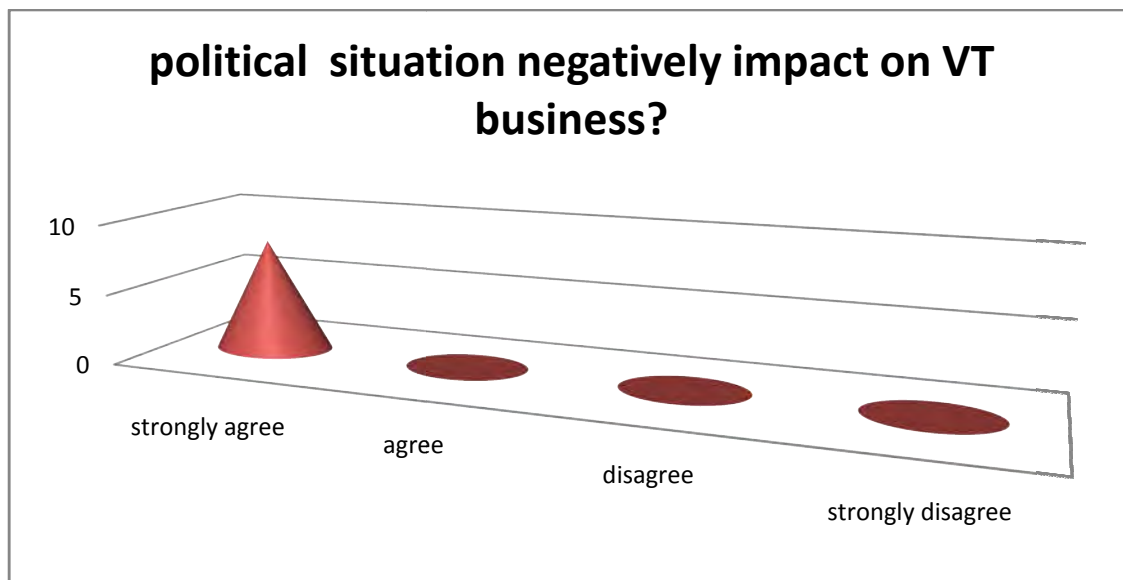
#### 4.8 technological & Political Challenges

Still now the whole country is not cent percent under the cellular phone network. But here VT systems are solely dependent on GSM network. As a result sometimes tracking devices lost signals so the location can not be determined precisely.



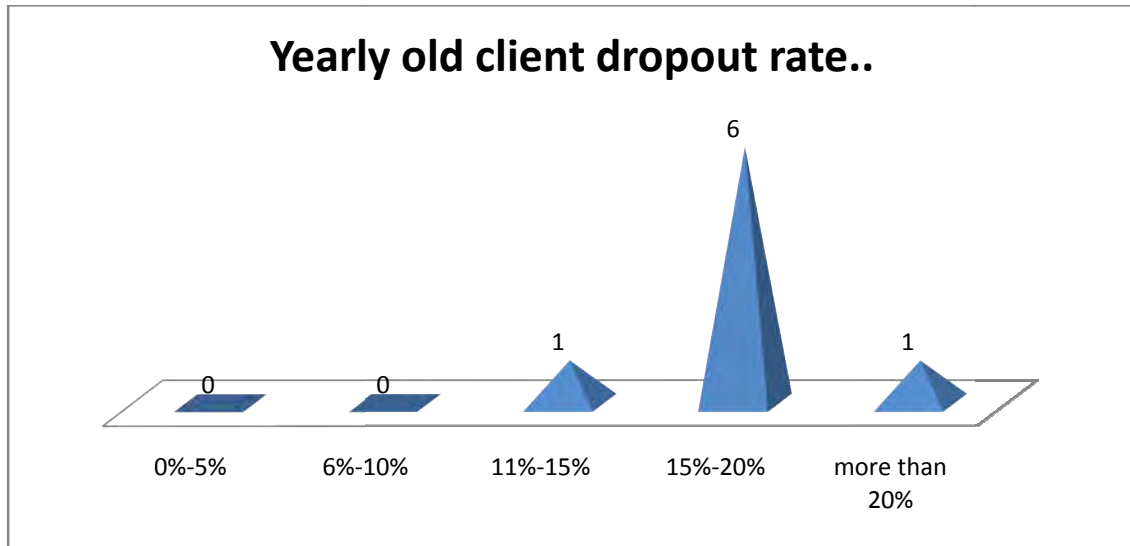
**Fig 26: phone network failure**

All of the 8 firms agreed that last one and half year political instability has drawn the VT sector to a declining point. VT clients have to pay monthly a fixed amount, whether the service is used or not and whether the vehicle moves or not.



**Fig 27: political impact on VT business**

Vehicles almost got stranded during the previous one and half year. But still the monthly charges is going on. So, many clients have dropped the service to cut cost.



**fig 28: yearly dropout rate of customer**

A devastating picture is seen in the above figure. There we can see that 6 companies from 8, said that they loses 15% TO 20 % of their customers yearly. They said that irregular vehicular movement is a cause of such behavior. Many clients take this service with no specific reason, and they drop such services eventually. This phenomena causes a huge work hour loses for companies. Baccusecompanies have to install the VT devices to their clients vehiculrs.

## **Other challenges:**

1. Since this is a new product so marketing is a challenge.
2. Bangladesh does not have it's own satellite.
3. Internet pnnetration is still low in our country.
4. Using of VT devices requires more or less technological knowledge, since here we have a lower literacy rate so it is hard to use VT technology.
5. Google map still not covered the entire Bangladesh, when it will happen, the VT companies can spread up their business throughout the country.
6. Still e-commerce does not get a solid ground in this country. When it will happen the product delivery systems must be optimized, and then VT technology will be a must for e-commerce companies
7. Coveringsea bound vessels requires higher technology, still Bangladeshi VT companies does not have the potential to track on the sea.



# Chapter Five

## Findings

- 1) According to revenue earning NITS Service (Pvt.) Ltd—Ntrack in the first position. The total earning in 2013 was taka. 2,61,00000/= . So new entrepreneur should start with a handsome amount of investment.
- 2) Since large level of technical personnel are required in this sector so government should look in to this factor and try to teach this technology in various institutions.
- 3) Vehicle tracking systems can help to reduce running costs by specifically targeting those who speed and waste fuel. By focusing upon these drivers it is possible to not only reduce fuel and maintenance bills, but to also reduce insurance premiums.
- 4) By using a system's automatic mileage reminder it is possible to reduce time wasted through vehicle maintenance. In addition, by having a service that ensures your vehicles are regularly serviced means that resale values for the fleet will also be higher.
- 5) Some insurance companies will offer around a thirty percent discount to companies who implement a GPS vehicle tracking system. This is not only because it encourages safer driving, but also helps recovery if thefts do occur.
- 6) Productivity of workers can be increased by being able to keep track of lunch hours, exposing unauthorized stops and breaks and by evaluating the overtime requests of workers. By having detailed information on the whereabouts of vehicles at all times, it is far easier to keep an eye on employee activities.
- 7) GPS devices help businesses to become more customers friendly. For instance, a cab company that is using a vehicle tracking system can tell a customer exactly where the nearest cab is and give a realistic estimate on how long it will be.
- 8) Business owners can find their most productive employees and use this information to implement further training or even a system of bonuses to enhance staff members' work ethic.
- 9) Since Bangladesh is enjoying a huge growth rate in VT sector so any new entrepreneur can be in this sector right now.
- 10) By having all the relevant information on one screen, those running the software have easy access to answer enquiries rapidly and accurately.

- 11) GPS systems reduce the amount of paperwork that drivers must fill out. By doing this you not only soften the blow of introducing such a system, but also increase the accuracy of your records.
- 12) Companies should offer lower rate devices, since in my survey I have found that most of the clients of VT devices are interested in low cost machines.
- 13) Vehicle tracking is becoming a critical tool for many fleets, especially van and commercial vehicle operators, with more than 70% of those utilizing the technology having used it for more than four years.
- 14) Vehicle operators are achieving measurable cost efficiencies with significant reductions in fuel usage, overtime claims and communications overheads.
- 15) The reputation of the vehicle tracking industry is generally good according to respondents, but some concerns remain around the financial viability of providers, overselling and the reliability of the industry.
- 16) There is still a proportion of vehicle operators not currently using vehicle tracking that are unconvinced about the potential benefits.

# Chapter Six

## Summary, Recommendations & Conclusion

## 6.1 Summary

A vehicle tracking system combines the use of automatic vehicle location in individual vehicles with software that collects these fleet data for a comprehensive picture of vehicle locations. Modern vehicle tracking systems commonly use GPS or GLONASS technology for locating the vehicle, but other types of automatic vehicle location technology can also be used. Vehicle information can be viewed on electronic maps via the Internet or specialized software. Urban public transit authorities are an increasingly common user of vehicle tracking systems, particularly in large cities.

The simple answer is that orbiting satellites watch your vehicle from above. However, it's obviously a bit more complex than that. According the U.S. Department of Defense, 24 satellites orbit the Earth and transmit signals to the ground (additional satellites are on standby but are not actively in use). Each orbits the planet every 12 hours, and they are strategically placed for impressively accurate triangulation.

There is a huge market for vehicle tracking system in Bangladesh. About twenty vehicle tracking service providers in Bangladesh are currently providing their services. Among them, Talukder ICT Bangladesh first introduced this service first in Bangladesh. Later Trackbangla and Finder vehicle tracking system service providers earn huge popularity in this sector. In 6 Sep 2009, Dhaka Metropolitan Police (DMP) started to use Automatic Vehicle Tracking System, which helps them to track their vehicle, and reduce the rate of vehicle damage from unwanted circumstances.

Productivity of workers can be increased by being able to keep track of lunch hours, exposing unauthorized stops and breaks and by evaluating the overtime requests of workers. By having detailed information on the whereabouts of vehicles at all times, it is far easier to keep an eye on employee activities. GPS devices help businesses to become more customers friendly. For instance, a cab company that is using a vehicle tracking system can tell a customer exactly where the nearest cab is and give a realistic estimate on how long it will be. Business owners can find their most productive employees and use this information to implement further training or even a system of bonuses to enhance staff members' work ethic. Vehicle tracking systems will vastly reduce your phone bills as it is no longer a necessity to constantly call employees to find their location. Vehicle operators are achieving measurable cost efficiencies with significant reductions in fuel usage , overtime claims and communications overheads.

## 6.2 Recommendations

Recently Bangladesh has highlighted as “DIGITAL BANGLADESH”. And the people of Bangladesh always prefer innovative ideas, so here there is a huge possibility of vehicle tracking usage. Vehicle Tracking companies are currently plying all over the country. But we cannot say that large competition is going in VT sector. So we want that a handsome number of new entrepreneurs should come across this VT vector.

Bangladesh Telecommunication Regulation Commission ( BTRC ) should be more friendly with the new entries. Because in the survey section we found that most of the current companies said that they are not satisfied with the BTRC charges. Which is, Form 5000/=, License fee 3,00000/= and annual charge 2,00000/= . So we recommend to BTRC that they should reduce the charges.

Another recommendation towards the government that since this VT sector requires much more skilled personnel, so government should take necessary steps to establish sufficient amount of new training centres all over the country. In current column in technical sector can not make proper required number of skilled technicians.

Another reason is people are now become busier they don't have enough time for wasting time on go through the vehicles by physically, so they can easily access to their vehicles in a very simple manner, so I would like to suggest them to install vehicle tracking app in their cell phones this will ease the tracking tasks.

I also like to suggest the new entrepreneurs that they should initially import VT devices instead of assemble them in-house. Because we have found that at very begging stage of Vehicle Tracking Business, establishing an assembling plant is quite burden on the entrepreneurs. But as the company grows, as well as the company can start to achieve huge amount of revenue, then they can start its own assembling plant.

I also want to suggests to the companies who are in VT business, that they should focus on after sales services. Because, I have found that most of the clients are interested in after sales services. Today, in our country carjacking is a normal matter. This kind of incidents are occurring any time, any place and police cannot provide the quick support to people to locate their vehicles immediately. In this circumstances vehicle tracking service may not be the substitute of police activities only but may be a good solution to keep in safe position.

In our country, many people believed that Insurance Company is better to keep the vehicles safe from uncertainty than vehicle tracking service provider. But true fact is insurance company only compensate them when the vehicle will damaged or lost, they can not provide the customers mental satisfaction when they leave their vehicles for their important task. But vehicle tracking service can locate their vehicles, can lock the vehicles engine, and communicate with drivers easily without any cost.

Price is a very important factor to enter into a new market. About more than 40% people wants to pay between 500-1,000taka. So at the time of selling product pricing is very much important. It is recommended at first low price, comprising to other companies, will set up to attract more customer, because if the price is same to other companies than customer will not get extra options to buy a new service. If low price they will buy first and then will judge the quality to buy further. And if they be satisfied with the service then they will buy it again even it be high priced.

After three months (February – April) of market survey very recently (in May) it has been found that there comes few other companies (Grameenphone and Banglalink) in this sector. So it is to be highly recommended that before launching the service VT companies should change some features of this service. And it is recommended that the new features could be less price, daily updates of the vehicle, set-up cameras inside the vehicles etc. Because the name Grameenphone is a well-known name and also has a strong brand loyalty in the market, if VT companies failed to do it then they can not compete them. So some extraordinary features will knock the customers mind to take the service very easily and undoubtedly.

To establish a competitive position in the market VT companies have to be careful about some criteria like are price, availability, security level, advertisement which will ensure the importance level and different features of the service.

VT companies have to use its own distributors channel and outlets; it is an opportunity and strength also. It will reduce the extra costs. Huge promotional activities (including low price) have to take to instable the market first, because it will make concern to other companies, then observing the market a stable price will be set up finally. It is recommended to take pull and push strategy. Under pull strategy various free gifts will be provided to the final consumer and under push strategy various incentives will be provided to the customers. Under push strategy VT companies can influence the customers for taking its new service. Promotional activities have to be taken more during some days, which are related to create some awareness among people.

## 6.3 Conclusion

There is a huge market for vehicle tracking system in Bangladesh. People in Bangladesh who have vehicles are very anxious about how they can protect their valuable asset. Now a day, carjacking is very normal fact. These type incidents are occurring enormously. To reduce these type bad incidents, vehicle tracking system can be very effective. In our country police are very busy to their works, and it is not possible to them to find or arrest the carjacker immediately. So if we using vehicle tracking service, we can easily locate our vehicle, shut down or lock the engine. In Bangladesh there are some GPS software and hardware developing companies but they still haven't gained much of popularity as in other countries. In Bangladesh vehicle tracking system is mainly used for business purposes.

If the costs of hardware and software are reduced many people in Bangladesh would opt for trackers in their personal vehicles and also for tractors, tourist buses. Government also has to reduce the restrictions imposed upon the availability of digital maps for commercial use for encouraging the software companies in developing cost efficient tracking solution. The main issue in Bangladesh is although the sales of personal and commercial vehicles are increasing the price of trackers is too high. Vehicle tracking will have large prospect in the near future in Bangladesh, which will revolutionize the way we travel.



## References:

1. Coifman, Benjamin. (1998) *A real-time computer vision system for vehicle tracking and traffic surveillance* p.3
2. Members of the Governance & Scrutiny Committee (2010) *REVIEW OF THE VEHICLE TRACKER SYSTEM (MASTERNAUT)* p-7-9
3. Ramanil, R. and Valarmathy, S. (2013) *Vehicle Tracking and Locking Systems Based on GPS and GSM* p.20
4. Bangladesh Telecommunication Regulatory and Commission (2008) *Regulatory and Licensing Guidelines (Amended) for Issuing License for Establishing, Operating and Maintaining Vehicle Tracking Services in Bangladesh* (No. BTRC/LL/Vehicle Tracking (311)/2008-277).
5. [http://en.wikipedia.org/wiki/Fleet\\_management](http://en.wikipedia.org/wiki/Fleet_management)
6. [http://en.wikipedia.org/wiki/GPS\\_tracking\\_unit](http://en.wikipedia.org/wiki/GPS_tracking_unit)
7. Verizon (2014) *Use GPS Tracking, TO DAZZLE YOUR CUSTOMERS WITH GREAT CUSTOMER SERVICE*
8. Apacheta, case study (2012) p-2, [www.apacheta.com](http://www.apacheta.com)
9. , DigiCore White Paper (2010) *The Adoption of Vehicle Tracking Systems* p-8

## Survey questionnaire

Dear Sir/Madam, I am a student of BRAC University , Department of MBA and presently doing a report on “**Challenges of Vehicle Tracking Business in Bangladesh**”. This survey is a crucial part of my report. It will take maximum 10 to 15 minutes and your time is very precious to me.

So , May I request you to kindly fill the questionnaire below .I can assure you that the data is going to be used for academic purpose only.

1. Company’s initial investment....

Ans:

2.Current annual revenue earning....

Ans:

3.Growth Rate of your firm (year to year)....

Ans:

4. yearly assembling expenditure?

Ans:

5. yearly training expenditure?

Ans:

6. Company’s operating experience ..

Ans: (i) less than 1 year (ii) 1-2 years old (iii) 3-4 years old (iv) 5-6 years old (v) greater than 6 years old

7. technological knowledge required for users regarding VT device using...

Ans: (i) very poor (ii)poor (iii)moderate (iv) high (v)very high

8. Existence of VT services known by people..

Ans: (i) very poor (ii)poor (iii)moderate (iv) high (v)very high

9. Customers most favored price range..

Ans: (i)Tk.5000-7000 (ii)Tk. 7001-9000(iii)Tk. 9001-11000(iv)more than 11000

10. Main Customer group....

Ans: (i)Personal User (ii) vehicle sellers (iii)Companies for office use (iv) Rent a car companies

11. Which kind of vehicle is mostly installed VT device?

Ans: (i) Private car or jeep (ii) motor cycle (iii) CNG auto rickshaw (iv) Trucks & Lorry

12. customers are basically from....

Ans: (i) only Dhaka (ii) only metropolitan areas (iii) only Dhaka and Chittagong (iv) whole country

13. Man power required....

Ans: (i) 10-20 (ii) 21-40 (iii) more than 40

14. Do you think that skilled man power is available for this sector?

Ans: (i) Yes (ii) No

15. License getting procedures from BTRC..

Ans: (i) Harassing (ii) Moderate (iii) Systematic

16. Does the charges applied by BTRC is justified? (Form 5000/=, License fee 3,00,000/= and annual charge 2,00,000/=)?

Ans: (i) YES (ii) No

17. Does the profit sharing by BTRC (which is 1%) is justified?

Ans: (i) YES (ii) No

18. Does the VT equipment is available here in Bangladesh

Ans: (i) YES (ii) No

19. Does your company assemble the VT devices?

Ans: (i) YES (ii) No

20. Do you think that GSM network failure is a problem?

Ans: (i) Yes (ii) No

24. Political situation negatively impact on VT business..

Ans: (i) strongly agree (ii) agree (iii) disagree (iv) strongly disagree

25. Yearly old client dropout rate..

Ans:

26. Any other challenges you think is hampering this sector?

Ans: